



***PHYSICAL
CONDITIONING
FOR THE
CADET,
CALIFORNIA
HIGHWAY
PATROL
APPLICANTS***



INDEX

TEST #1

500 Yard Run _____ 2

TEST #2

Upper Body Strength _____ 2

TEST #3

Trunk Strength Flexion _____ 3

TEST #4

SideStep _____ 4

TEST #5

100-Yard Sprint _____ 5

PREPARATION FOR THE TESTS

WARM-UP

Flexibility Exercises _____ 5

MUSCULAR STRENGTH AND ENDURANCE

Floor exercises _____ 7

WEIGHT TRAINING _____ 9

Chest Exercises _____ 10

Shoulder Exercises _____ 11

Back Exercises _____ 11

Arm Exercises _____ 12

Leg Exercises _____ 13

ENDURANCE EXERCISES _____ 14

Walking – Jogging (level A) _____ 15

Jogging (level B) _____ 16

Jogging – Walking (level C) _____ 17

COOLING DOWN PERIOD _____ 17



To: APPLICANTS,

CADET, CALIFORNIA HIGHWAY PATROL

In order to successfully perform the duties of a cadet, California Highway Patrol, it is essential to maintain a high level of physical conditioning. To help ensure success during Academy training and later, on the job, the Highway Patrol tests each applicant's physical ability through the use of five job-related physical performance tests.

Unfortunately, many individuals are unable to meet these physical standards and are, therefore, disappointed in their pursuit of a career in law enforcement.

Your success on the pre-employment physical performance test is directly related to the amount of time you devote to physical conditioning prior to the test. To assist you in your preparation, we are providing a description of the test battery and suggestions for training activities that will improve your ability to perform each test. This booklet also contains exercise programs that include these activities. Participating in these or similar programs will substantially increase your chances of success.

TEST NUMBER ONE:

500 Yard Run

This test requires the candidate to run 500 yards in two minutes or less.

- *Suggested Training Activity:* Running
- *Self-evaluation:* If you can run 1 1/4 laps on a quarter-mile track in less than two minutes, you have a good chance of passing this test.

TEST NUMBER TWO:

Upper Body Strength

This test is a composite of three measurements: (1) Shoulder strength adduction, (2) grip strength, and (3) dynamic arm.

Shoulder strength adduction requires the candidate to hold a device close to the chest in front of the sternum with the forearms parallel to the floor and palms facing the chest. The candidate pushes the handles of the device together with a maximum effort.

Grip Strength requires the candidate to squeeze a hand dynamometer (grip strength testing device) with a maximum effort.

Dynamic Arm requires the candidate to pedal a stationary bicycle with his/her hands at a workload of 2.5 kiloponds for up to one minute.

- *Suggested Training Activities:* Calisthenics and/or weight training involving the upper body (specific exercises are explained in a later portion of this handout).

SELF-EVALUATION:

Grip Strength: Grasp a new tennis ball in the palm of your hand so that the imprinted seam on the ball faces you. Squeeze until top portion is completely flattened. Hold five seconds.

Arm/Shoulder Strength: Standard push-ups from toes and hands. Flex elbows and lower chest, touch chest to floor, return to straight arm support. Complete 10 repetitions.

Static Arm Strength: Perform a single pull down on a universal-type weight lifting apparatus with a 90 pound load. Pull bar behind head and hold for three seconds.

If you can do all three of these tests you have a good chance of passing the Upper Body Strength test.

TEST NUMBER THREE: ***Trunk Strength Flexion***

This test requires the candidate to exert 113 pounds of force by contracting the abdominal muscles. Some back muscle strength and flexion is also involved.

- *Suggested Training Activities:* Calisthenics involving the abdominal muscles such as sit-ups, sit-ups with the weight held on the chest and/or weight training exercises designed for abdominal strength.
- *Self-evaluation:* If you can perform a half sit-up, holding in the uppermost position for three seconds (men with 10 pounds held on chest and women with 20 pounds held behind head), you have a good chance of passing this test.

TEST NUMBER FOUR: ***Side Step***

The applicant will take a standing position astride the center line with feet parallel to the line. The applicant will then sidestep or slide to the left of the center line until the left foot touches or crosses the line on the left. The applicant will then sidestep to the right, crossing the centerline and touch the line on the right. This activity is repeated as many times as possible in 10 seconds. A point is scored each time a line is crossed, the applicant must score thirteen points in 10 seconds. The distance between the two outside lines is eight feet.

- *Suggested Training Activities:* Perform the side-step test as described above.

TEST NUMBER FIVE:

100-Yard Sprint

This test requires the candidate to run 100 yards in 20 seconds or less.

- *Suggested Training:* Leg strengthening activities such as running or sprinting and/or weight training exercises designed to develop leg power.
- *Self Evaluation:* If you can run 100 yards in 20 seconds or less then you should pass this test.

PREPARATION FOR THE TESTS

Following are several exercise programs that will improve flexibility, muscular strength, and cardiorespiratory endurance. The best way to prepare for the tests is to participate in an exercise program that includes conditioning exercises for all of these areas. This can be accomplished in as little as 45 minutes a day, 3 to 5 days a week. If you are sincere in your desire to become a cadet, California Highway Patrol, this is a small investment of time to ensure success. The more effort you put into your physical conditioning program, the better prepared you will be. Therefore, we strongly recommend that you engage in a regular conditioning program.

PROPER WARM-UP

Your exercise session should always begin with a good warm-up period. The purpose of a warm-up is to allow your body to acclimate slowly to increased activity. During this time muscles, joints, tendons and ligaments become warm and flexible; circulation to the muscles is improved and your heart rate gradually increases. All this should occur prior to beginning vigorous activity.

A good warm-up will reduce your chances of injury and minimize the amount of muscle and joint soreness you may experience in the early stages of your exercise program. The best way to warm-up is to perform the exercise at a reduced intensity, gradually increasing until you have reached your training level. For example, in a running program, you should start out with a slow job for several minutes then gradually increase to your normal pace. In a weight training program you may perform several repetitions of each exercise with a light weight or ride a stationary bicycle at a light resistance for five to two minutes before beginning your actual training program. For calisthenics, you should perform a light set (reduced repetitions) of each exercise before moving on to more intense activity.

FLEXIBILITY EXERCISES

Increased flexibility can prevent injuries. You can improve your flexibility with minimal time and effort by incorporating stretching exercises into your conditioning program.

Stretching exercises should always be done slowly and smoothly. Many people like to stretch at the beginning of their exercise session. If you choose to do this, extra care must be taken to stretch gently and slowly as your muscles and connective tissue are not warm. If you are not very flexible and are trying to improve in this area, we suggest you stretch at the end of your exercise program when your muscles are thoroughly warm. Stretching exercise cannot be substituted for a proper warm-up as stretching does not prepare your body for vigorous exercise. Following are some stretching exercises that will help you improve your flexibility:

Hip Flexor Stretch



Lying on your back, bring your right knee to your chest. Grab your leg below the knee and pull slowly towards your chest. Hold this position for 30 seconds and repeat with your opposite leg.



Lower Back Stretch

Lying on your back, bring both knees to your chest. Grab each leg below the knee and pull slowly towards your shoulders. Hold this position for 30 seconds. Repeat.



Upper Trunk Stretch

Lying on your stomach, push your upper body off the mat as far as possible keeping your pelvis or hips flat on the floor. Hold this position for 30 seconds. Repeat.



Low Back Stretch

Sitting on the floor with your legs extended out in front of you and your knees flat against the floor, grab behind your knees and slowly pull your head towards your knees. Do not bounce or bob, but move slowly. Hold this position for 30 seconds. Repeat.



Lower Leg and Heel Stretch

Stand approximately 3 feet from the wall. Extend your arms and place your hands against the wall. Gradually lean forward, keeping your heels planted firmly on the ground. You will feel this stretch in the lower leg and heel area. Hold this position for 30 seconds. Repeat.



Back Arch

Kneel on your hands and knees with your knees 3-4 inches apart directly under your hips and your

arms directly under your shoulders. Drop your head forward and contract your stomach and buttocks muscles arching your lower back. Hold this position for 10 seconds and then relax. Repeat 4 times.



Abdominal Stretch

Start in the kneeling position identical to that explained above for the back arch. Lower your chest to the floor. Then extend your arms forward, lower your head and raise your buttocks as high as you can by arching your back. Hold this position for 10 seconds. Repeat 4 times.

MUSCULAR STRENGTH AND ENDURANCE

From the many strength developing exercises available, the following have been selected to represent the major muscle groups in your body. Many of these require the use of weights or other strength developing equipment. While weights can be purchased at a minimal cost, most of the equipment you will need is available through your local YMCA, YWCA, recreation department, school district or private gymnasium.

FLOOR EXERCISES

If you do not have access to weight training equipment, you can gain a great deal from the following exercises which use your body weight for resistance. Floor exercise should be done a minimum of three times per week in order to gain any benefit, up to a maximum of five times per week.



Modified Push-Up (arm and shoulder extensors)

If you have limited upper body strength, the modified push-up is your starting point. Lie flat on

your stomach, hands in a position to push your trunk upward, and your legs bent at the knees. Keeping your back straight and in line with your buttocks, raise your trunk until your arms are fully extended. Lower your body to a position where your chest just touches the floor and then push back up to the fully extended position. This exercise is to be done with your arms only, so immobilize the rest of your body. Perform 10 repetitions the first day and progress to 30.



Full Push-Up

Once you have mastered 30 repetitions of the modified push-up, you have the strength to perform the full push-up. Perform this exercise exactly as you did the modified, except use your toes and not your knees as the point of support. This forces you to lift a greater percentage of your body weight. Start with 10 repetitions and progress to 30.



Head and Shoulder Curl (abdominals)

Weak abdominal muscles? If your answer is yes, then this is the starting point for your abdominal exercise. Lie on your back with your legs bent at the knee. Place your hands on the side of your head. Now, slowly curl your head and shoulders up to about 45 degree angle as illustrated in the figure. Hold this position for about 5 seconds and then return to your starting position. Repeat 10 times to start with and gradually increase to 30 repetitions.



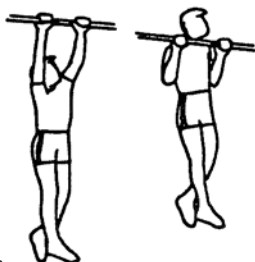
Full Sit-Up

Once you have successfully completed 30 repetitions of the head and shoulder curl, you can

progress to the full sit-up. Start in the same position, lying on your back with your knees bent. With your hands on the side of your head, curl your head, shoulders, and trunk slowly upward to a full sitting position. Return slowly to your starting position and repeat. Start with 10 repetitions and gradually build up to 40.

Modified Knee Bends (thighs)

With your feet as wide apart as your shoulders, your toes pointed straight ahead, and your hands on your hips, squat until your thighs are parallel to the ground. Be sure to keep your back straight. Then return to a standing position.



Pull-Ups (back)

Use an over-hand grip, and beginning from a hanging position with the arms straight and a wider-than-shoulder width grip, pull up until your chin is above the bar. Return to the hanging position.

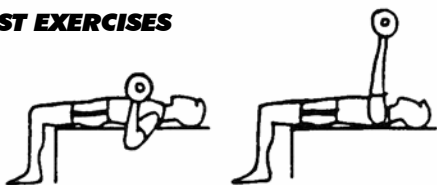
WEIGHT TRAINING

In a weight training program, sufficient rest between workouts is very important. You should train every other day allowing a full day in between workouts for muscles to repair. Your starting weight for each exercise should be the weight you can lift 8 to 10 consecutive times, but no more than that. As your strength increases, you will be able to do more repetitions.

Once you are able to do 12 consecutive repetitions, you should increase the weight and reduce the number of repetitions to 8. Each time you complete consecutive repetitions of one exercise, you have done a “set”. Begin with one set and work up to three sets of each exercise, resting as long as necessary between sets. If you have to rest more than a few minutes before you can go on to the next set, you should reduce the weight.

WEIGHT TRAINING EXERCISES

CHEST EXERCISES



Flat bench Barbell Press

Lie on your back on a flat exercise bench with support standards. Position yourself under the bar and keep your body stable. Take a slightly wider than shoulder-width grip on the barbell, palms facing up. Lift the barbell up and under control, slowly lower it to the high point of your chest. Without pausing push the bar back up. Always keep your elbows directly out to the sides for maximum stress to your chest muscles.



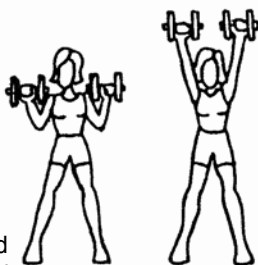
Dumbbell Flyes

Lie on your back on a flat exercise bench, hold dumbbells with your palms facing each other. Take a deep breath then lower both dumbbells to the sides while keeping your elbows slightly bent. Lower your arms slowly and under control making sure to feel a good stretch in your chest muscles. Exhale and bring the dumbbells back up to a starting position along the same arc through which you lowered them.

SHOULDER EXERCISE

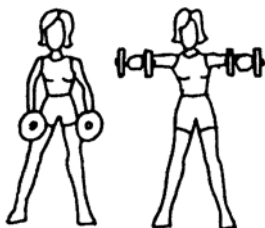
Dumbbell Presses

Standing or seated, hold a dumbbell in each hand at shoulder level. Push dumbbells up to arm's length, exhale as you press the dumbbell. Lower the dumbbell back down, inhaling as you do.



Standing Dumbbell Lateral Raises

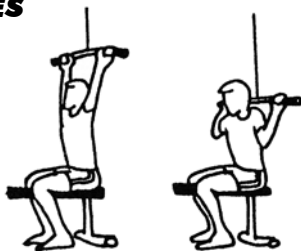
Stand erect holding one dumbbell in each hand in front of your body against your thighs. Lean slightly forward and raise both dumbbells simultaneously to a level even with the top of your shoulders. Keep your elbows and wrists slightly flexed as you raise the dumbbells and never let your hands get higher than your elbows as you make the lift. Breathe naturally.

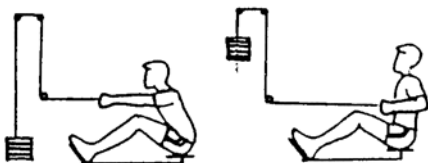


BACK EXERCISES

Lat Pulldowns to the Rear

Start in a seated position on a pulley system exercise equipment with the exercise bar hanging overhead. The tops of your thighs should be anchored for stability. Reach up and grasp the bar with a medium-width overhand grip. Pull the bar down until it touches the back of your neck. Make sure to pull your elbows way down and back so your chest is elevated. You should exhale as you pull the weight down and inhale as you resist the weight going back up.

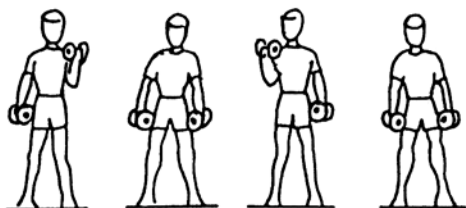




Long Pulley Rows

Sit facing a pulley system with your feet blocked. Lean forward and grasp the exercise handle. From a fully stretched position, pull the handle in toward your stomach. Keep your elbows back as far as possible. Exhale as you pull the weight and inhale as it returns to the starting position. Do not sling weights back with the power of your lower back. This is dangerous and ineffective.

ARM EXERCISES

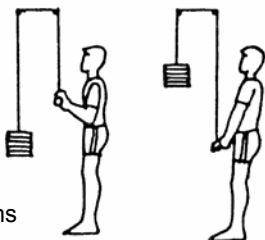


Alternate Dumbbell Curls

You may stand or sit. Hold a dumbbell in each hand. Inhale and curl one dumbbell up to your shoulder. Exhale and lower the same dumbbell to the starting position. Then inhale and raise the other dumbbell to your shoulder in a curling motion. Exhale and lower. Repeat with each arm the required repetitions.

Triceps Pushdowns

Stand erect facing a lat machine weight stack. Grasp a bar, palms down hooked to the cable. Keeping your elbows in, press down on the bar slowly and steadily until your arms are



completely extended. Slowly let the weight down. Breathe normally.

LEG EXERCISES



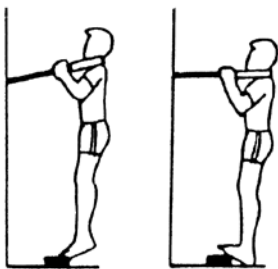
Leg Press

Place feet on pedals, grasp handles on seat. Press feet forward to elevate weight, return. Inhale while lowering weight and exhale while lifting it.



Leg Curls

Lie face down on apparatus. Your knees and lower legs should be off the end of the bench with the pads behind your ankles and lower legs. Slowly flex your legs up as close as possible to your upper thigh. Do not jerk weight or lift pelvis off the bench. From the top position, lower the weight slowly. Exhale as you lower the weight, inhale as you raise the weight-up.



Standing Calf Raise

Stand erect on a block with the pads of a standing calf machine braced squarely against your shoulders. Go up on your toes, pushing as high as possible. Then, slowly lower yourself into a stretched position. Work through a full range of motion. Breathe normally throughout the exercise.

ENDURANCE EXERCISES

Activities such as walking, jogging, running, cycling, swimming and hiking are good endurance activities. Activities such as golf, bowling and softball are generally of little value from the standpoint of developing cardiorespiratory endurance. Endurance exercises should be performed a minimum of 3 or 4 times per week, with a duration of 20 to 40 minutes.

The intensity at which you participate in your exercise program is probably the most critical factor. To participate at too low an intensity means you will gain little benefit, if any, from your program. To perform at too high an intensity could mean serious medical complications and sufficient discomfort to discourage you from conditioning.

You can obtain a substantial “conditioning effect” by exercising at a ‘comfortable’ level which is between 60 to 80 percent of your capacity. Exercising at a level below 60 percent results in little, if any, conditioning and above 80 percent, the additional gains are small relative to the work required. Most athletes are forced to exercise or train at a level above 80 percent of their capacity; however, this is neces-

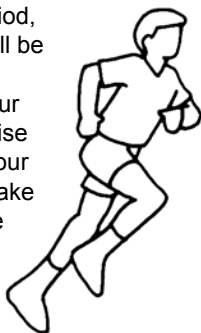


sary for them to make those small, seemingly insignificant improvements which often make the difference between success and failure in the athletic world.

You can measure your training intensity by taking your heart rate. Without having a complete physiological and medical profile of your endurance capacity, it is difficult to accurately assign you a training intensity.

However, since all candidates are between 20 to 31 years of age, it is safe to have each of you train at a heart rate of 150 beats per minute. You can easily monitor your heart rate by taking your pulse periodically during the exercise session and then adjusting your exercise intensity to bring your heart rate either up or down to 150 beats per minute. This heart rate level is referred to as the TRAINING HEART RATE (THR). Initially, you should stop about every five minutes during a 30-minute workout to determine your heart rate.

If you start taking your pulse immediately upon stopping the exercise for a 10-second period, this value multiplied by six will be very close to your heart rate during the exercise. Wear your wristwatch during your exercise activity. As you progress in your conditioning program, it will take more work to reach the same heart rate. Thus, you have a built-in measure of your progress.



WALKING - JOGGING

LEVEL A

STEP	PEAK O2 VALUE	WORKOUT DESCRIPTION	TIME MINUTES	MILES
I	17.2	Walk 2.25 miles in 30'	30	2.25
II	25.5	Walk .25 miles in 3'45" Jog .25 miles in 3' Repeat for 37 minutes	31	2.25
III	24.5	Walk .5 miles in 7'30" Jog .5 miles in 6' Repeat for 34'30"	34 1/2	2.50
IV	24.5	Walk .25 miles in 3'45" Jog 3/4 miles in 9' Walk .5 miles in 7'30" Repeat first two steps	33	2.50
V	24.5	Jog 1 mile in 12' Walk .25 miles in 3'45" Repeat	31 1/2	2.50
VI	27.5	Walk .25 miles in 3'45" Jog 1 mile in 11' Repeat for 33 1/4 min.	33 1/4	2.75

JOGGING

LEVEL B

STEP	PEAK O2 VALUE	WORKOUT DESCRIPTION	TIME MINUTES	MILES
I	27.5	Jog 1 mile in 11' Jog .5 miles in 6' Repeat	34	3.00
II	27.5	Jog 3 miles in 33'	33	3.00
III	30.5	Jog 1 mile in 10' Jog 1 mile in 11' Jog 1 mile in 10'	31	3.00
IV	30.5	Jog 3 miles in 30'	30	3.00
V	33.5	Jog 1 mile in 9'15" Jog 1 mile in 10' Jog 1 mile in 9'15"	28 1/2	3.00
VI	33.5	Jog 3 miles at 9'15"	28	3.00

To determine your pulse rate accurately:

1. Locate your carotid, temporal, brachial, or radial pulse.
 - a. Carotid artery-just to the side of the larynx (voice box) in the neck region.
 - b. Temporal artery-in the temple regions of the head usually along the hairline.
 - c. Brachial-on the inside of the upper arm behind the biceps muscle and just beneath the axilla (armpit).
 - d. Radial artery-on the palm side of the wrist directly in line with the thumb.
2. Place the tips of your middle and/or index fingers over the region of the arterial pulses and press lightly.
3. Take the pulse count for a 10-second period, counting the first pulse as zero and starting your 10-second interval at that time.
4. Convert your 10-second pulse to a minute count (multiply by 6)

The most efficient way to improve your cardiovascular endurance is through jogging and running. Unfortunately, without knowledge of your

endurance capacity, it is impossible to provide you with an accurate starting point. This will have to be determined largely through trial and error.

From the following tables, select what you feel is an acceptable starting level. Monitor your heart rate frequently during the first few sessions. If your heart rate is too high, drop back one or two steps. Progress through each step at your own rate using your heart rate as your guide. As you get in better shape, you will have to exercise harder to maintain the same heart rate of 150 beats per minute. You should set Level C, Step IV as your goal in preparation for the test battery.

JOGGING - WALKING

LEVEL C

STEP	PEAK O ₂ VALUE	WORKOUT DESCRIPTION	TIME MINUTES	MILES
I	33.5	Jog 3.25 miles at 9'15"/mi	30	3.25
II	36.5	Jog 3 3/8 miles at 8'30"/mi	29	3.38
III	36.5	Jog 3.5 miles at 8'30"/mi	30	3.50
IV	39.5	Jog-Run 3.5 miles at 8'/mi	28	3.50
V	39.5	Jog-Run 3.75 mi at 8'/mi	30	3.75
VI	39.5	Jog-Run 4.0 miles at 8'/mi	32	4.00

COOLING DOWN PERIOD

Every exercise session should be concluded with a tapering down or cooling off period. This is best accompanied by slowly reducing the intensity of the activity during the last several minutes of your workout. A slow, restful walk for several minutes keeps your blood circulating and helps reduce the chances of developing muscle soreness. Stopping abruptly following an endurance bout of exercise causes blood to pool in the legs and you may actually feel dizzy and faint.

